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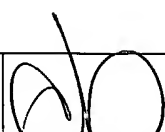
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,358	02/17/2004	Ken Koyama	20099/0200781-US0	9212
7278	7590	08/11/2004	EXAMINER	
DARBY & DARBY P.C.			ZIMMERMAN, JOHN J	
P. O. BOX 5257			ART UNIT	
NEW YORK, NY 10150-5257			PAPER NUMBER	

1775

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/781,358	KOYAMA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John J. Zimmerman	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20040217</u> . | 6) <input type="checkbox"/> Other: ____  |

## FIRST OFFICE ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

2. The Information Disclosure Statement filed February 17, 2004 has been considered. An initialed form PTO-1449 is enclosed with this Office Action. More information is requested about the references listed as CC and CD on the applicant's form PTO-1449. These references appear to be particularly relevant to the claimed subject matter and also appear to be the result of a different authorship entity than the inventive entity of this pending application. In the applicant's response to this Office Action, the examiner requires disclosure of the actual publication date of these references in order to determine if they may qualify as prior art to the pending application. Should the publication date of the CC and/or CD references predate the effective filing date of this application, then applicants are requested to address the issue of their different inventive entities to determine whether these references actually do qualify as prior art under 35 U.S.C. 102(a).

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***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Zhang (U.S. Patent 6,521,108).

5. Zhang discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver bonding the two components (e.g. see Figure 1; column 5, lines 9-19). As shown in the Figure and described in the disclosure, the silver layer remains in the interlayer after bonding. The interlayer can be placed between the aluminum and copper components as an insert foil layer and has a thickness of between 1 micron and 100 microns (e.g. column 3, lines 9-24). The thickness of the resultant composite would necessarily

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be thicker than 0.1 mm or more (e.g. applicant's claim 9) when a 100 micron interlayer is used. Although it is noted that applicant recites rolling of the composite in article claims 7-9, there is no factual evidence of record that rolling (without any required rolling processing parameters) necessarily produces a patentably distinct product from the product of Zhang. Therefore the recitation of rolling is given little weight in the rejected product claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Skinner (U.S. Patent 3,119,632).

7. Skinner discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver braze between the two components (e.g. see Figures 1 and 4; column 2, lines 54-71; column 5, lines 13-22). As shown in the figures, the silver layer essentially remains intact as an interlayer after bonding. Brazing temperatures would need to meet the melting points of the constituents (e.g. 1760 °F for silver) as described by Skinner (e.g. see column 1, lines 54-57). The interlayer can be placed between the aluminum and copper components as an insert disc having a thickness of at least about 0.025 inch (e.g. column 2, lines 69-71).

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8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Skinner (U.S. Patent 3,105,293).

9. Skinner discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver braze between the two components (e.g. see Figures 1 and 2; column 3, line 64 - column 4, line 25; column 5, lines 8-43; Example II). As shown in the figures and described in the disclosure, the silver layer essentially remains intact as an interlayer after bonding. The silver interlayer between the aluminum and copper components has a thickness of at least about 0.002 inch (e.g. column 4, lines 3-25) and brazing temperatures exceed 1070-1080 °F (e.g. see column 5, lines 8-43).

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Moll (German Offenlegungsschrift 2406828).

11. Moll discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver greater than 50 microns thickness between the two components (e.g. see Figures 1-2; abstract). As shown in the figures and described in the abstract, the silver layer remains intact as an interlayer after bonding.

12. Claims 1, 3 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett (U.S. Patent 3,551,998).

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13. Bennett discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver bonding the two components (e.g. see Figure 4; column 1, lines 49-56; column 3, lines 51-69; ). As shown in Figure 4, the silver layer remains in the interlayer after bonding. Although it is noted that applicant recites rolling of the composite in article claims 7-8, there is no factual evidence of record that rolling (without any required rolling processing parameters) necessarily produces a patentably distinct product from the product of Bennett. Therefore the recitation of rolling is given little weight in the rejected product claims. When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett (U.S. Patent 3,551,998).

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16. Bennett discloses a bonded structure comprising an aluminum component and a copper component having and an interlayer of silver bonding the two components as described in the rejection, above. Bennett may differ from claims 2, 6 and 9 in that Bennett may not provide specific thicknesses of the silver shim and overall composite. It would have been obvious to one of ordinary skill in the art at the time the invention was made, however, that the silver shim of Bennett should be made thick enough to remain after bonding as shown in Figure 4 and the thickness of the overall composite can be any thickness as long as it allowed for the metallurgical bonds described by Bennett. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the silver shim of Bennett to be thick enough to allow for bonding while also no thicker than necessary since the excessive use of silver would render the bonded composite uneconomical.

*Allowable Subject Matter*

17. Claims 10-14 are allowed. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. While the prior art of record clearly discloses that silver can be used as an intermediate layer between bonded aluminum and copper components, the temperature and time method parameters of claim 5 are not disclosed or made obvious by the prior art. Applicant's disclosure shows that these parameters affect the structure of the final article. In addition, method claims 10-14 require thin Al-Cu bonded structures including the method step of rolling brazed bonded aluminum-silver-copper composites and this



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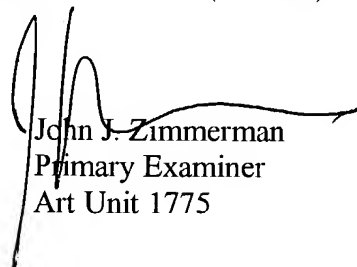
method is not disclosed or made obvious by the art of record. There is no motivation in the art of record to form thin Al-Cu bonded structures in this manner.

### *Conclusion*

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited art serves to further establish the level of ordinary skill in the art at the time the invention was made.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Zimmerman  
Primary Examiner  
Art Unit 1775

jjz  
August 6, 2004